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<110> DRAKE, Caroline Rachel
      PAINE, Jacqueline Ann Mary
      SHIPTON, Catherine Ann

<120> Enhanced Accumulation of Carotenoids in Plants

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<141> 2005-09-14

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23

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26

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31

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ctcccatgtt cattgagaaa tggccagacc tag                                  1233


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<212>   DNA
<213>   Zea mays

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acagaggagc ggcgccgcgc catatgggcc atctatgtgt ggtgtaggag gacagatgag      480

cttgtagatg ggccaaacgc caactacatt acaccaacag ctttggaccg gtgggagaag      540
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32

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ctcccatgtt cattgagaaa tggccagacc tag                               1233


<210>   13
<211>   1263
<212>   DNA
<213>   Oryza sp.

<400>   13
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gacatcttca atggcgttgt gactaacaaa tggagaagct tcatgaagag acagatcaag     1020

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cggtggccgg tctgggcgtc tctgttgtta taccggcaaa tccttgacga gatagaagca     1140

aacgattaca caacttcac aaagagggcg tacgttggga aggcgaagaa attgctagcg     1200

cttccagttg catatggtag atcattgctg atgccctact cactgagaaa tagccagaag     1260

tag                                                                    1263
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<210> 14
<211> 420
<212> PRT
<213> Oryza sp.

<400> 14

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Met Ala Ala Ile Thr Leu Leu Arg Ser Ala Ser Leu Pro Gly Leu Ser
1               5                   10                  15


Asp Ala Leu Ala Arg Asp Ala Ala Ala Val Gln His Val Cys Ser Ser
            20                  25                  30


Tyr Leu Pro Asn Asn Lys Glu Lys Lys Arg Arg Trp Ile Leu Cys Ser
            35                  40                  45


Leu Lys Tyr Ala Cys Leu Gly Val Asp Pro Ala Pro Gly Glu Ile Ala
        50                  55                  60


Arg Thr Ser Pro Val Tyr Ser Ser Leu Thr Val Thr Pro Ala Gly Glu
65                  70                  75                  80


Ala Val Ile Ser Ser Glu Gln Lys Val Tyr Asp Val Val Leu Lys Gln
                85                  90                  95


Ala Ala Leu Leu Lys Arg His Leu Arg Pro Gln Pro His Thr Ile Pro
            100                 105                 110


Ile Val Pro Lys Asp Leu Asp Leu Pro Arg Asn Gly Leu Lys Gln Ala
        115                 120                 125


Tyr His Arg Cys Gly Glu Ile Cys Glu Glu Tyr Ala Lys Thr Phe Tyr
    130                 135                 140
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34

Leu Gly Thr Met Leu Met Thr Glu Asp Arg Arg Arg Ala Ile Trp Ala
145   150   155   160

Ile Tyr Val Trp Cys Arg Arg Thr Asp Glu Leu Val Asp Gly Pro Asn
                165   170   175

Ala Ser His Ile Thr Pro Ser Ala Leu Asp Arg Trp Glu Lys Arg Leu
            180   185   190

Asp Asp Leu Phe Thr Gly Arg Pro Tyr Asp Met Leu Asp Ala Ala Leu
            195   200   205

Ser Asp Thr Ile Ser Lys Phe Pro Ile Asp Ile Gln Pro Phe Arg Asp
        210   215   220

Met Ile Glu Gly Met Arg Ser Asp Leu Arg Lys Thr Arg Tyr Lys Asn
225   230   235   240

Phe Asp Glu Leu Tyr Met Tyr Cys Tyr Tyr Val Ala Gly Thr Val Gly
            245   250   255

Leu Met Ser Val Pro Val Met Gly Ile Ala Pro Glu Ser Lys Ala Thr
            260   265   270

Thr Glu Ser Val Tyr Ser Ala Ala Leu Ala Leu Gly Ile Ala Asn Gln
        275   280   285

Leu Thr Asn Ile Leu Arg Asp Val Gly Glu Asp Ala Arg Arg Gly Arg
        290   295   300

Ile Tyr Leu Pro Gln Asp Glu Leu Ala Glu Ala Gly Leu Ser Asp Glu
305   310   315   320

Asp Ile Phe Asn Gly Val Val Thr Asn Lys Trp Arg Ser Phe Met Lys
            325   330   335

Arg Gln Ile Lys Arg Ala Arg Met Phe Phe Glu Glu Ala Glu Arg Gly
            340   345   350

Val Thr Glu Leu Ser Gln Ala Ser Arg Trp Pro Val Trp Ala Ser Leu
        355   360   365

Leu Leu Tyr Arg Gln Ile Leu Asp Glu Ile Glu Ala Asn Asp Tyr Asn
        370   375   380

35

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Asn Phe Thr Lys Arg Ala Tyr Val Gly Lys Ala Lys Lys Leu Leu Ala
385                 390             395                 400


Leu Pro Val Ala Tyr Gly Arg Ser Leu Leu Met Pro Tyr Ser Leu Arg
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Asn Ser Gln Lys
            420


<210>   15
<211>   1260
<212>   DNA
<213>   Capsicum annuum

<400>   15
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ttggtatccg ttcgtgaggg aaaccggatt tttgattcgt cggggcgtag gaatttggcg    120

tgcaatgaga gaatcaagag aggaggtgga aaacaaaggt ggagttttgg ttcttacttg    180

ggaggagcac aaactggaag tggacggaaa ttttctgtac gttctgctat cgtggctact    240

ccggctggag aaatgacgat gtcatcagaa cggatggtat atgatgtggt tttgaggcag    300

gcagccttgg tgaagagaca gctgagatcg accgatgagt tagatgtgaa gaaggatata    360

cctattccgg ggactttggg cttgttgagt gaagcatatg ataggtgtag tgaagtatgt    420

gcagagtacg caaagacgtt ttacttagga acgatgctaa tgactccgga gagaagaaag    480

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agtggacggc catttgacat gctcgatgct gctttgtccg acacagtttc caaatttcca    660

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ggagaagatg ccagaagagg aagagtctat ttgcctcaag atgaattagc acaggcaggt    960

ctatccgacg aagacatatt tgctggaaga gtgaccgata aatggagaat cttcatgaag   1020

aaacaaattc agagggcaag aaagttcttt gacgaggcag agaaggagt gaccgaattg   1080

agcgcagcta gtagatggcc tgtgttggca tctctgctgt tgtaccgcag gatactggac   1140

gagatcgaag ccaatgacta caacaacttc acaaagagag cttatgtgag caaaccaaag   1200

aagttgattg cattacctat tgcatatgca aaatctcttg tgccttctac aagaacatga   1260
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36

<210> 16
<211> 1239
<212> DNA
<213> Lycopersicon esculentum

<400> 16
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tccaatgaga gaatcaatag aggtggtgga aagcaaacta ataatggacg gaaattttct     180

gtacggtctg ctattttggc tactccatct ggagaacgga cgatgacatc ggaacagatg     240

gtctatgatg tggttttgag gcaggcagcc ttggtgaaga ggcaactgag atctaccaat     300

gagttagaag tgaagccgga tatacctatt ccggggaatt tgggcttgtt gagtgaagca     360

tatgataggt gtggtgaagt atgtgcagag tatgcaaaga cgtttaactt aggaactatg     420

ctaatgactc ccgagagaag aagggctatc tgggcaatat atgtatggtg cagaagaaca     480

gatgaacttg ttgatggccc aaacgcatca tatattaccc cggcagcctt agataggtgg     540

gaaaataggc tagaagatgt tttcaatggg cggccatttg acatgctcga tggtgctttg     600

tccgatacag tttctaactt tccagttgat attcagccat tcagagatat gattgaagga     660

atgcgtatgg acttgagaaa atcgagatac aaaaacttcg acgaactata cctttattgt     720

tattatgttg ctggtacggt tgggttgatg agtgttccaa ttatgggtat cgcccctgaa     780

tcaaaggcaa caacagagag cgtatataat gctgctttgg ctctggggat cgcaaatcaa     840

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caagatgaat tagcacaggc aggtctatcc gatgaagata tatttgctgg aagggtgacc     960

gataaatgga gaatctttat gaagaaacaa atacataggg caagaaagtt ctttgatgag    1020

gcagagaaag gcgtgacaga attgagctca gctagtagat tccctgtatg ggcatctttg    1080

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agagcatatg tgagcaaatc aaagaagttg attgcattac ctattgcata tgcaaaatct    1200

cttgtgcctc ctacaaaaac tgcctctctt caaagataa                          1239
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<210> 17
<211> 891
<212> DNA
<213> Erwinia sp.

<400> 17
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37

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acgctgggct ttcaggcccg gcagcctgcc ttacaaacgc ccgaacaacg tctgatgcaa      180

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cgtatcgccc gacgtttggt gcaggaagca gaaccttact atttgtctgc cacagccggc      660

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accacgcccg aaaaattaac gctgctgctg ccgcctctg gtcaggccct tacttcccgg      840

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<210>   18
<211>   1479
<212>   DNA
<213>   Erwinia sp.

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caagctgcgg ggatccccgt cttactgctt gaacaacgtg ataaacccgg cggtcgggct      120

tatgtctacg aggatcaggg gtttacctt gatgcaggcc cgacggttat caccgatccc      180

agtgccattg aagaactgtt tgcactggca ggaaaacagt aaaagagta tgtcgaactg      240

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aacgatcaaa cccggctcga agcgcagatt cagcagttta tccccgcga tgtcgaaggt      360

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actgtccctt ttttatcgtt cagagacatg cttcgcgccg cacctcaact ggcgaaactg      480

caggcatgga gaagcgttta cagtaaggtt gccagttaca tcgaagatga acatctgcgc      540

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gacggtcgca ggttcctgac gcaagccgtc gcgtcaaatg cagatgtggt tcataccta      840
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tacctggtcg cgcaggcac gcatcccggc gcaggcattc ctggcgtcat cggctcggca    1440

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<210>   19
<211>   1488
<212>   DNA
<213>   Erwinia sp.

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ggtcgggctt atgtctacga ggatcagggg tttacctttg atgcaggccc gacggttatc     180

accgatccca gtgccattga agaactgttt gcactggcag gaaaacagtt aaaagagtat     240

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39

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actaatctct acctggtcgg cgcaggcacg catcccggcg caggcattcc tggcgtcatc 1440

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<211> 839
<212> DNA
<213> Oryza sp.

<400> 20
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acaatatcat gagtaatgtg tgagcattat gggaccacga ataaaaaga acattttgat 180

gagtcgtgta tcctcgatga gcctcaaaag ttctctcacc ccggataaga aacccttaag 240

caatgtgcaa agtttgcatt ctccactgac ataatgcaaa ataagatatc atcgatgaca 300

tagcaactca tgcatcatat catgcctctc tcaacctatt cattcctact catctacata 360

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<211> 642
<212> DNA
<213> Oryza sp.

40

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attagatcaa tcctgcacta caagtagagt aaagtggtga tttctcttaa atctctcgaa   180

tggtgattta agaattcagt gcaaaccaaa tccttgctat aatcaaatgt tcggtaccgc   240

atcaacggaa caataaaaag cgcctggcgt accataattt tgtcattctt gttgaaattt   300

gtaatttaag atgcatgagg ccacacgacc ttaatgttca acgtgtcatg cattagtgaa   360

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41

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49

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51

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52

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